

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 December 2001 (06.12.2001)

PCT

(10) International Publication Number
WO 01/92722 A1

(51) International Patent Classification⁷: **F04B 17/04**

(21) International Application Number: PCT/KR01/00827

(22) International Filing Date: 19 May 2001 (19.05.2001)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
2000/29045 29 May 2000 (29.05.2000) KR

(71) Applicant (for all designated States except US): **LG ELECTRONICS INC.** [KR/KR]; 20, Yoido-Dong, Yongsungpo-Ku, Seoul 150-721 (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LEE, Hyuk** [KR/KR]; Jungsanmaeul Apt. 211-902, Ilsan 2-Dong, Ilsan-Gu, Gyeonggi-Do, Goyang 411-728 (KR). **PARK, Jung-Sik** [KR/KR]; Hyundai Apt. 602-1601, Gueui

3-Dong, Gwangjin-Gu, Seoul 143-760 (KR). **SONG, Gye-Young** [KR/KR]; Jugong Apt. 804-404, Haan 3-Dong, Gyeonggi-Do, Gwangmyong 423-757 (KR). **KU, Bon-Cheol** [KR/KR]; Dong-Bu Apt. 106-1203, Nae-Dong, Gyungsangnam-Do, Kimhae 621-751 (KR).

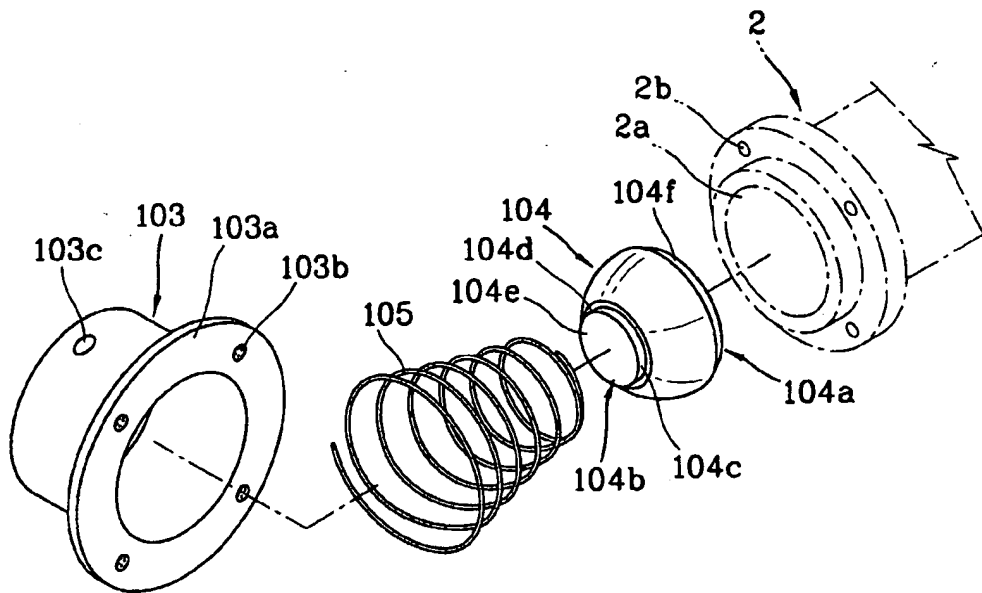
(74) Agent: **PARK, Jang-Won**; Jewoo Building 5th Floor, 200, Nonhyun-Dong, Kangnam-Ku, Seoul 135-010 (KR).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: DISCHARGE VALVE APPARATUS FOR RECIPROCATING COMPRESSOR



(57) Abstract: A discharge valve apparatus for a reciprocating compressor comprises a discharge cover having built-in volume so as to cover a front end surface of the cylinder; a discharge valve disposed so as to be contacted/separated to/from the front end surface of the cylinder by a piston which undergoes a reciprocating movement inside the cylinder; and a valve spring having both ends respectively adhered to rear side of the discharge valve and to inner surface of the discharge cover so as to elastically support the rear side of the discharge valve. A rotation radius of the valve spring of a conical type is formed to be gradually reduced or increased so that impacts of a part to other parts during the compression can be prevented. Accordingly, when the valve spring is compressed in accordance with the compression and discharge strokes of the piston, the impacting noise caused by the impacts of the respective parts in the valve spring can be prevented previously.

WO 01/92722 A1